

Thermal diffusivity of solids with low expansion coefficient: a dilatometric technique

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## Thermal diffusivity of solids with a low expansion coefficient: A dilatometric technique

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**M. Omini<sup>1</sup>, A. Sparavigna<sup>1</sup> and A. Strigazzi<sup>1</sup>**

(1) Dipartimento di Fisica, Politecnico di Torino, CISM and INFN, Unità di Torino, Corso Duca degli Abruzzi 24, I-10129 Torino, Italy

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**Abstract** A dilatometric method is presented, suitable to obtain both thermal diffusivity and conductivity of low-conducting solids with a low expansion coefficient. The repeatability of the measurements of thermal conductivity is 3%, whereas that for diffusivity is 5 %. Data for fused silica at room temperature are given, consistent with those reported in the literature. Since the method is based on detecting the thermal expansion of a copper disk in thermal contact with the specimen, its range of applicability is linked to the sensitivity by which the dilation of copper can be measured: no difficulty arises between liquid nitrogen and 1000°C.

**Key words** low-conducting materials - low-expanding materials - thermal conductivity - thermal diffusivity

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